What's Up for November? The crab nebula!

Hello and welcome. I'm Jane Houston Jones at NASA's Jet Propulsion Laboratory in Pasadena, California.

2009 is the International Year of Astronomy. And his month's special viewing target is the crab nebula - the only supernova remnant that's easy to see from a modest telescope!

In 1758, Charles Messier was scanning the skies for comet Halley. He noticed a whitish light, shaped like the flame of a candle in the constellation Taurus. He soon noticed it wasn't moving against the background stars so it couldn't be the comet. M1 became the first entry in his catalogue of 110 comet-like objects.

This object was discovered in 1731 by English amateur astronomer John Bevis and sketched by Irish astronomer William Parsons, the 3rd Earl of Rosse in 1844 through his big 36-inch reflector telescope. His sketch resembled a crab and the name Crab Nebula stuck.

The history of this object goes back even further.

A "guest star" was visible in the summer sky of 1054. Ancient astronomers in both the old and new worlds documented a new bright star in the daytime sky. It was a supernova in the constellation Taurus and was visible with the unaided eye for nearly two years.

In the 1940's the 100-inch Hooker Telescope at Mt. Wilson was used to compute back to when the Crab Nebula began to expand. It began near the time of the supernova of 1054.

At the center of the nebula is a rapidly spinning neutron star, or pulsar which emits pulses of radiation 30 times a second. In 1967 British astronomy graduate student Jocelyn Bell discovered this first pulsar.

Three of NASA's Great Observatories show that the superdense neutron star is energizing the expanding nebula. The Chandra X-Ray image traces the most energetic particles. The white dot in the center is the pulsar. Spitzer's infrared image traces the cloud of electrons trapped within the stars magnetic field. The Hubble telescope's image in visible light is one of the largest images taken by Hubble's Wide Field and Planetary Camera 2.

The Crab Nebula is faint but can be seen with binoculars if your sky conditions are really good. Aim your binoculars the red giant star Aldebaran in Taurus. Draw a straight line out to the southernmost of the bull's two horns, and the Crab Nebula is just next to that star. You'll see a fuzzy patch shaped like the flame of a candle.

It’s difficult but not impossible to see the faint neutron star within the Crab Nebula. If you can see 2 stars, the fainter of the two is the Crab Pulsar. It is one of few historically observed supernovae in our Milky Way Galaxy so go out and try to see it!

On November 17th, if you can get away from city lights, you’ll have a great view of the annual Leonid Meteor shower. After midnight local time you should see lots of shooting stars.

You can learn all about NASA's missions at www.nasa.gov

That’s all for this month, I’m Jane Houston Jones.